

## WHAT IS CLAIMED IS:

- 1           1. A recombinant polynucleotide comprising a nucleotide sequence encoding at  
2   least 5 consecutive amino acids from Repro-PC-1.0 polypeptide (SEQ ID NO:2).
- 1           2. The polynucleotide of claim 1 wherein the nucleotide sequence encodes native  
2   Repro-PC-1.0 polypeptide (SEQ ID NO:2).
- 1           3. The polynucleotide of claim 1 wherein the nucleotide sequence encodes a  
2   Repro-PC-1.0 polypeptide analog.
- 1           4. The polynucleotide of claim 1 wherein the nucleotide sequence encoding at  
2   least 5 consecutive amino acids from Repro-PC-1.0 polypeptide is identical to a  
3   nucleotide sequence from SEQ ID NO:1.
- 1           5. The polynucleotide of claim 2 wherein the nucleotide sequence is identical to  
2   nucleotides 151-1425 of SEQ ID NO:1.
- 1           6. The polynucleotide of claim 3 wherein the nucleotide sequence encodes an  
2   immunogenic Repro-PC-1.0 polypeptide analog.
- 1           7. A polynucleotide probe or primer of at least 7 nucleotides that specifically  
2   hybridizes to a nucleotide sequence selected from Repro-PC-1.0 cDNA (SEQ ID NO:1)  
3   or its complement.
- 1           8. The polynucleotide probe or primer of claim 7 whose sequence is identical or  
2   complementary to a nucleotide sequence selected from Repro-PC-1.0 cDNA (SEQ ID  
3   NO:1).
- 1           9. The polynucleotide probe of claim 7 further comprising a label.

1        10. An inhibitory polynucleotide comprising an antisense sequence of at least 7  
2        nucleotides that specifically hybridizes to a nucleotide sequence selected from Repro-PC-  
3        1.0 cDNA of SEQ ID NO:1 and that inhibits expression of Repro-PC-1.0 in cells.

1        11. The inhibitory polynucleotide of claim 10 whose sequence is complementary  
2        to a nucleotide sequence selected from Repro-PC-1.0 cDNA (SEQ ID NO:1).

1        12. A recombinant polynucleotide comprising an expression control sequence  
2        operably linked to a nucleotide sequence encoding:  
3                a Repro-PC-1.0 polypeptide,  
4                a Repro-PC-1.0 analog,  
5                a polynucleotide probe or primer of at least 7 nucleotides that specifically  
6        hybridizes to a nucleotide sequence selected from Repro-PC-1.0 cDNA (SEQ ID NO:1)  
7        or its complement, or  
8                an inhibitory polynucleotide comprising an antisense sequence of at least 7  
9        nucleotides that specifically hybridizes to a nucleotide sequence selected from Repro-PC-  
10       1.0 cDNA (SEQ ID NO:1) and that inhibits expression of Repro-PC-1.0 in cells.

1        13. A recombinant cell comprising a recombinant polynucleotide of claim 12.

1        14. A method for detecting a polynucleotide comprising a nucleotide sequence  
2        selected from Repro-PC-1.0 cDNA (SEQ ID NO: 1) or its complement in a sample  
3        comprising the steps of:  
4                (a) contacting the sample with a polynucleotide probe or primer comprising a  
5        sequence of at least 7 nucleotides that specifically hybridizes to the nucleotide sequence  
6        and  
7                (b) detecting whether the polynucleotide has specifically hybridized to the  
8        polynucleotide,  
9                whereby specific hybridization provides a detection of the polynucleotide in the  
10       sample.

1           15. A method of inhibiting Repro-PC-1.0 expression in a cell comprising  
2 providing the cell with an inhibitory polynucleotide of claim 10 or with a polynucleotide  
3 comprising a nucleotide sequence that encodes a decoy Repro-PC-1.0 analog.

1           16. A purified, recombinant Repro-PC-1.0 polypeptide whose amino acid  
2 sequence is identical to that of SEQ ID NO:2, or allelic variants of SEQ ID NO:2.

1           17. A Repro-PC-1.0 polypeptide analog that is not naturally occurring and that  
2 comprises a sequence of at least 5 consecutive amino acids selected from the amino acid  
3 sequence of Repro-PC-1.0 polypeptide (SEQ ID NO:2).

1           18. The Repro-PC-1.0 polypeptide analog of claim 17 which is a decoy that  
2 competes with Repro-PC-1.0 polypeptides for interaction with molecules that naturally  
3 interact with Repro-PC-1.0.

1           19. The Repro-PC-1.0 polypeptide analog of claim 17 which, when presented as  
2 an immunogen, elicits the production of an antibody which specifically binds to native  
3 Repro-PC-1.0 polypeptide.

1           20. A composition comprising an antibody that specifically binds to Repro-PC-1.0  
2 polypeptide (SEQ ID NO:2).

1           21. The composition of claim 20 wherein the antibodies are monoclonal  
2 antibodies.

1           22. The composition of claim 20 wherein the antibodies are polyclonal antibodies.

1           23. A method for detecting a Repro-PC-1.0 polypeptide in a sample, comprising  
2 the steps of:  
3           (a) contacting the sample with an antibody that specifically binds to the Repro-  
4 PC-1.0 polypeptide and  
5           (b) detecting specific binding between the antibody and Repro-PC-1.0  
6 polypeptide,  
7           whereby specific binding provides a detection of Repro-PC-1.0 polypeptide in  
8 the sample.

1           24. A method for use in the diagnosis of prostate cancer in a subject comprising  
2 the steps of:  
3           (a) detecting a diagnostic amount of Repro-PC-1.0 mRNA or Repro-PC-1.0  
4 polypeptide in a sample from the subject; and  
5           (b) comparing the diagnostic amount with a normal range of Repro-PC-1.0  
6 mRNA or Repro-PC-1.0 polypeptide in a non-cancerous control sample,  
7           whereby a diagnostic amount above the normal range provides a positive  
8 indication in the diagnosis of prostate cancer.

1           25. The method of claim 24 wherein the sample is blood, urine, lymph node  
2 tissue or prostate tissue.

1           26. A method of detecting prostate cancer cells in a subject comprising the steps  
2 of:  
3           (a) administering to the subject a compound comprising an antibody coupled to  
4 a label and  
5           (b) detecting the location of the compound in the subject.

1           27. The method of claim 26 wherein the label is (1) a radioactive label and the  
2 step of detecting comprises detecting label by camera imaging, or (2) an isotopic label  
3 and the step of detecting comprises detecting the label by magnetic resonance imaging.

1           28. A method for use in following the progress of prostate cancer in a subject  
2 comprising the steps of:

3 (a) detecting first and second amounts of Repro-PC-1.0 mRNA or Repro-PC-  
4 1.0 polypeptide in samples from the subject at a first and a second time; and

5 (b) comparing the first and second amounts.

6 whereby an increase between the first and second amounts indicates  
7 progression of the prostate cancer and a decrease between the first and second amounts  
8 indicates remission of the prostate cancer.

1 29. A method for the prophylactic or therapeutic treatment of prostate cancer in a  
2 subject comprising administering to the subject an inhibitory polynucleotide of claim 10,  
3 an inactive Repro-PC-1.0 analog polypeptide that acts as a decoy or a composition  
4 comprising an immunotoxin that specifically binds to Repro-PC-1.0 polypeptide in an  
5 amount effective to inhibit metastasis of prostate cancer cells, whereby inhibition of  
6 metastasis provides the treatment of prostate cancer.

1 30. A polypeptide or polynucleotide vaccine for eliciting an immune response  
2 against Repro-PC-1.0 comprising an immunogenic Repro-PC-1.0 polypeptide analog or a  
3 polynucleotide encoding the analog.

1 31. The vaccine of claim 31 wherein the analog bears an MHC Class I or MHC  
2 Class II binding motif.

1 32. A method of eliciting in a subject an immune response against a cell bearing  
2 Repro-PC-1.0 polypeptide on its surface comprising administering to the subject a vaccine  
3 of claim 27.

1 33. The method of claim 32 wherein the immune response is an MHC Class I-  
2 restricted cell-mediated immune response and the vaccine comprises a recombinant  
3 polynucleotide encoding an immunogenic Repro-PC-1.0 polypeptide analog bearing an  
4 MHC Class I binding motif.

1 34. The method of claim 32 wherein the immune response is an MHC Class II-  
2 restricted immune response and the vaccine comprises an immunogenic Repro-PC-1.0

- 3 polypeptide analog bearing an MHC Class II binding motif or a recombinant  
4 polynucleotide encoding the analog.

1 35. A screening method for determining whether a compound modulates the  
2 expression of Repro-PC-1.0 in a cell comprising contacting the cell with the compound  
3 and determining whether the production of Repro-PC-1.0 mRNA or polypeptide are  
4 increased or decreased.

1 36. A screening method for determining whether a compound inhibits the activity  
2 of Repro-PC-1.0 comprising contacting a cell that expresses Repro-PC-1.0 with the  
3 compound and determining whether the exocytosis from the cell or capacitance across the  
4 cell membrane is altered.

1 37. A method of detecting a chromosomal translocation of a Repro-PC-1.0 gene  
2 comprising the steps of:

3 a) hybridizing a labeled probe of claim 7 to a chromosome spread from a cell  
4 sample to determine the pattern of hybridization and

5 b) determining whether the pattern of hybridization differs from a normal  
6 pattern.

1 38. A method of detecting polymorphic forms of Repro-PC-1.0 comprising  
2 comparing the identity of a nucleotide or amino acid at a selected position from the  
3 sequence of a test Repro-PC-1.0 gene or polypeptide with identity of the nucleotide or  
4 amino acid at the corresponding position of native Repro-PC-1.0 (SEQ ID NO:1 or 2),  
5 whereby a difference in identity indicates that the test polynucleotide is a polymorphic  
6 form of Repro-PC-1.0.